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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,313	04/12/2000	Hidehiko Kira	000452	6169

23850 7590 10/02/2003

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EXAMINER

RENNER, CRAIG A

ART UNIT PAPER NUMBER

2652

DATE MAILED: 10/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/548,313

Applicant(s)

KIRA ET AL.

Examiner

Craig A. Renner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-37 is/are pending in the application.
- 4a) Of the above claim(s) 4,6,9-29,31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,8,30 and 33-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 July 2003 has been entered.

### ***Election/Restrictions***

2. Claims 14-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7, filed 4 February 2002.

3. Claims 10-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9, filed 14 March 2002.

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4. Claims 4, 6, 9 and 31-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 14, filed 7 November 2002.

***Specification***

5. The disclosure is objected to because of the following informalities:

a. Throughout the specification the term "bear" has been inappropriately used to mean --bare--. Each instance of "bear" should be corrected to read --bare--. Note, for instance, line 22 on page 2, line 20 on page 18 and line 27 on page 20.

b. In line 1 of claim 5, the spelling of "lest" should be corrected to read --least--.

Appropriate correction is required.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Many elements in claims 36 and 37 are indefinite because they lack clear and/or positive antecedent basis including "the corner portions" (line 6 in each of claims 36 and 37) and "the integrated circuit" (line 10 in each of claims 36 and 37).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3, 5, 8, 30 and 33-35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shiraishi et al. (US 6,084,746) in view of Lii et al. (US 5,935,304).

With respect to claims 1-3, 5, 30 and 34, Shiraishi teaches a head assembly (17) comprising a mounting surface (31); an integrated circuit chip (20) which is mounted on the mounting surface (as shown in FIGS. 3-4, for instance) and processes signals, and

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a head slider (19) which is provided with a head (line 10 in column 6, for instance) and is mounted on the mounting surface (as shown in FIGS. 3-4, for instance), a height (H1) of the integrated circuit chip being lower than a height (H2) of the head slider from the mounting surface (as shown in FIG. 4, for instance) [as per claims 1-3, 5 and 30]; wherein the mounting surface is substantially flat (as shown in FIGS. 3-4, for instance) [as per claim 34].

With respect to claims 8 and 35, Shiraishi teaches a disk unit (FIG. 1, for instance) for reading information from and writing information to a disk (10), comprising a head assembly (17) having a mounting surface (31), a head slider (19) provided with a head (line 10 in column 6, for instance) and mounted on the mounting surface (as shown in FIGS. 3-4, for instance), and an integrated circuit chip (20) which is mounted on the mounting surface (as shown in FIGS. 3-4, for instance) and processes information read from and/or written to the disk via the head, a height (H1) of the integrated circuit chip being lower than a height (H2) of the head slider from the mounting surface (as shown in FIG. 4, for instance) [as per claim 8]; wherein the mounting surface is substantially flat (as shown in FIGS. 3-4, for instance) [as per claim 35].

With respect to claim 33, Shiraishi teaches a unit (FIG. 1, for instance) for reading information from and writing information to a recording medium (10), comprising a head assembly (17) having a mounting surface (31), a head slider (19) provided with a head (line 10 in column 6, for instance) and mounted on the mounting surface (as shown in FIGS. 3-4, for instance), and an integrated circuit chip (20) which is mounted

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on the mounting surface (as shown in FIGS. 3-4, for instance) and processes information read from and/or written to the recording medium via the head, a height (H1) of the integrated circuit chip being lower than a height (H2) of the head slider from the mounting surface (as shown in FIG. 4, for instance).

As the claims are directed to head assembly, per se, the method limitation appearing in line 2 of claim 2 can only be accorded weight to the extent that it affects the structure of the completed head assembly. Note that “[d]etermination of patentability in ‘product-by-process’ claims is based on product itself, even though such claims are limited and defined by process [i.e., “evaporation”], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process”, *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a “[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., “evaporation”], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations”, *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

Shiraishi, however, remains silent as to the integrated circuit chip height further including a “layer” as per claims 1-3, 5, 8, 30 and 33-35, “wherein said layer covers at least peripheral portions of the integrated circuit chip” as per claim 5, “wherein said layer covers at least an entire upper surface of the integrated circuit chip” as per claim 30 and “wherein said layer is made of poly(p-xylylene)” as per claim 3.

Lii teaches an integrated circuit chip (42) height further including a layer (48), wherein the layer covers at least peripheral portions of an integrated circuit chip (as shown in FIG. 2A, for instance) and wherein the layer covers at least an entire upper surface of the integrated circuit chip (as shown in FIG. 2A, for instance) for the purpose of reducing the likelihood of cracks propagating through the chip (lines 14-16 in column 4, for instance). Official notice is taken of the fact that poly(p-xylylene) is a notoriously old and well known chip covering layer material. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the integrated circuit chip height of Shiraishi further include a layer, wherein the layer covers at least peripheral portions of the integrated circuit chip and wherein the layer covers at least an entire upper surface of the integrated circuit chip, as taught by Lii, and to have had the layer of Shiraishi in view of Lii be made of poly(p-xylylene). The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the integrated circuit chip height of Shiraishi further include a layer, wherein the layer covers at least peripheral portions of the integrated circuit chip and wherein the layer covers at least an entire upper surface of the integrated circuit chip, as taught by Lii since such reduces the likelihood of cracks propagating through the chip.

One of ordinary skill in the art would have been motivated to have had the layer of Shiraishi in view of Lii be made of poly(p-xylylene) since such is a notoriously old and well known chip covering layer material, and since selecting a known material on the



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basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

11. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al. (US 6,084,746) in view of Grebe et al. (US 5,274,913).

With respect to claim 36, Shiraishi teaches a head assembly (17) comprising a mounting surface (31); an integrated circuit chip (20) which is mounted so as to be raised above the mounting surface (as shown in FIG. 4, for instance) and processes signals, and a head slider (19) provided with a head (line 10 in column 6, for instance), wherein a height (H1) of the integrated circuit chip being lower than a height (H2) of the head slider from the mounting surface (as shown in FIG. 4, for instance).

With respect to claim 37, Shiraishi teaches a disk unit (FIG. 1, for instance) for reading information from and writing information to a disk (10), comprising a head assembly (17) having a mounting surface (31), a head slider (19) provided with a head (line 10 in column 6, for instance), and an integrated circuit chip (20) which is mounted so as to be raised above the mounting surface (as shown in FIG. 4, for instance) and processes information read from and/or written to the disk via the head, wherein a height (H1) of the integrated circuit chip being lower than a height (H2) of the head slider from the mounting surface (as shown in FIG. 4, for instance).

Shiraishi, however, remains silent as to the integrated circuit chip being "covered at least on the corner portions and bumps mounting the integrated circuit chip... by a layer of poly (p-xylylene)".

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Grebe teaches an integrated circuit chip (21) covered at least on corner portions thereof and bumps (41) mounting the integrated circuit chip by a layer (51) of poly (p-xylylene) (lines 15-16 in column 9, for instance) for the purpose of providing protection from corrosive ions (lines 41-44 in column 1, for instance). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the integrated circuit chip of Shiraishi be covered at least on the corner portions and bumps mounting the integrated circuit chip by a layer of poly (p-xylylene) as taught by Grebe. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the integrated circuit chip of Shiraishi be covered at least on the corner portions and bumps mounting the integrated circuit chip by a layer of poly (p-xylylene) as taught by Grebe since such provides protection from corrosive ions.

### ***Response to Arguments***

12. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (703) 308-0559. The examiner can normally be reached on Tuesday-Friday 7:30 AM - 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Craig A. Renner  
Primary Examiner  
Art Unit 2652

CAR